**Small Business Innovation Research/Small Business Tech Transfer**

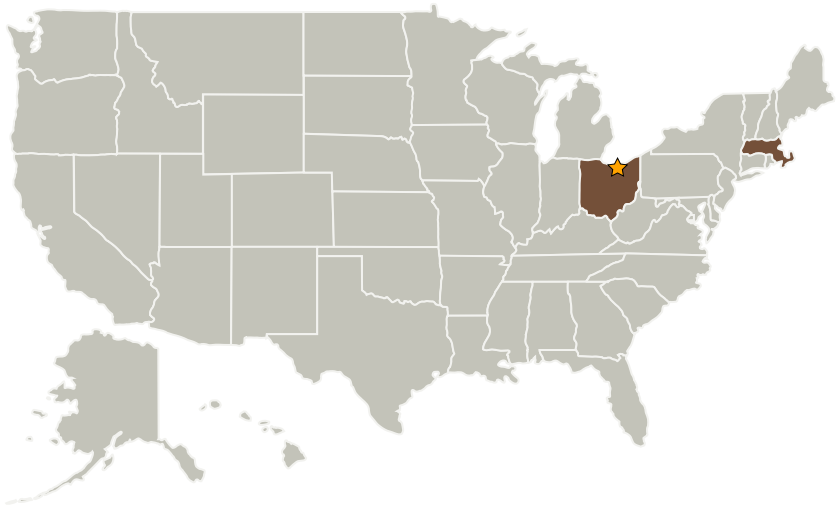
# Nanoshell Encapsulated Li-ion Battery Anodes for Long Cycle Life, Phase I

Completed Technology Project (2009 - 2009)

## Project Introduction

A new high capacity rechargeable Li battery anode based on Li metal alloys protected by carbon nanoshells will be developed. A reversible Li-ion capacity exceeding 600 mAh/g or nearly twice that obtainable with graphite anodes is expected. Coupled with our advanced polymer electrolyte and high voltage cathode, we expect a fully developed battery to have a specific energy of >150 Wh/Kg, and energy density of >300 Wh/l and the capability to produce >1000 deep charge/discharge cycles and thus makes it very desirable for space power applications of NASA.

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Glenn Research Center(GRC) | Lead Organization | NASA Center | Cleveland, Ohio |
| EIC Laboratories, Inc. | Supporting Organization | Industry | Norwood, Massachusetts |

| Primary U.S. Work Locations | |
|---|---|
| Massachusetts | Ohio |


Nanoshell Encapsulated Li-ion Battery Anodes for Long Cycle Life, Phase I

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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Glenn Research Center (GRC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX03 Aerospace Power and Energy Storage
  - TX03.2 Energy Storage
    - TX03.2.1 Electrochemical: Batteries